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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,001	03/12/2004	Bernd Schmandt	LLP113US	7567
51092                      7590                      03/18/2009 ESCHWEILER & ASSOCIATES LLC 629 EUCLID AVENUE, SUITE 1000 NATIONAL CITY BUILDING CLEVELAND, OH 44114				
EXAMINER FLORES, LEON				
ART UNIT 2611		PAPER NUMBER		
NOTIFICATION DATE 03/18/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing@eschweilerlaw.com

# Office Action Summary

**Application No.**

10/799,001

**Applicant(s)**

SCHMANDT ET AL.

**Examiner**

LEON FLORES

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,6-10 and 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,11,12 and 18-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/21/2009 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection.

### ***Response to Remarks***

Applicant asserts that *"none of the prior art of record teaches "setting the counter to the maximum count each time an erroneous transmission on the frequency channel is identified", as recited in claim 1"*.

The examiner respectfully disagrees. The reference of Knuth does suggest setting the counter to the maximum count each time an erroneous transmission on the frequency channel is identified. (See col. 8, lines 15-20 "the cumulative value for the counter of that channel has reached a maximum count value" "if it has, it means that the channel has been experiencing interference")

Applicant finally asserts that *"not only does Knuth fail to provide any suggestion or motivation to set the counter to a maximum count each time an erroneous*

*transmission on the frequency channel is identified as set forth in claim 1, but Knuth actually teaches away from this solution. For example, Knuth explicitly refers to an embodiment which "has the tendency to avoid the counter from reaching maximums." (col. 7, lines 7-9) Knuth goes on to state that its system "tends to drive the count towards the middle values of the Channel Quality count" (col. 7, lines 13-15)".*

The examiner respectfully agrees. The reference of Knuth explicitly states that this type of algorithm is for non-linear systems. And that many other algorithms, linear and non-linear, can be employed. (See col. 7, lines 60-62)

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims (1, 4-5, 18-20) are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, applicant fails to teach what apparatus is implementing these steps.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims (1, 4-5, 11-12, 18-19) are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al. (hereinafter Gan) (US Patent 7,027,418 B2) in view of Knuth et al. (hereinafter Knuth) (US Patent 5,418,839)**

Re claim 1, Gan discloses a Method for selecting frequency channels in a data transmission method that uses a frequency hopping method, comprising: determining an existence of interference on a frequency channel. (See col. 6, lines 30-34)

But the reference of Gan fails to teach that it comprises: (a) incrementing a counter each time an erroneous transmission on the frequency channel is identified; (b) decrementing the counter each time an error-free transmission on the frequency channel is identified; repeating the acts of (a) and (b) until the counter exceeds a

maximum count; and eliminating the frequency channel from a frequency hopping sequence when the counter exceeds the maximum count.

However, Knuth does. (See col. 6, line 23 – col. 8, line 29) Knuth discloses incrementing a counter each time an erroneous transmission on the frequency channel is identified (col. 6, lines 44-61); decrementing the counter each time an error-free transmission on the frequency channel is identified (col. 6, lines 44-61. Furthermore, incrementing or decrementing the counter are well known in the art.); repeating the acts of (a) and (b) until the counter exceeds a maximum count (col. 6, lines 44-60 "incrementing and decrementing the counter is well known in the art" & col. 8, lines 15-23 "reached a maximum value"); and eliminating the frequency channel from a frequency hopping sequence when the counter exceeds the maximum count. (col. 8, lines 15-20 "channel experiencing interference may not be used")

Therefore, taking the combined teaching of Gan and Knuth as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Gan, in the manner as claimed and as taught by Knuth, for the benefit of determining interference in a channel.

The combination of Gan and Knuth further discloses reinserting the frequency channel into the frequency hopping sequence. (In Gan, see col. 20, lines 46-52, col. 12, lines 36-39) Furthermore, re-testing and re-determination of the channel performance must be done in order to select good channels and not bad channels. This is due to interference changing over time – some "previously good channels may become bad and vice versa". One way to retest the channels is to measure the RSSI of the channel.

If "there is not interference, the RSSI will be low".

But the combination of Gan and Knuth fails to explicitly teach that it comprises:

(c) decrementing the counter each time an error free transmission on the frequency channel is identified; (d) setting the counter to the maximum count each time an erroneous transmission on the frequency channel is identified; repeating acts (c) and (d) until the counter reaches a minimum count; and reinserting the frequency channel into the frequency hopping sequence when the counter has reached the minimum count.

However, the reference of Knuth does suggest (c) decrementing the counter each time an error free transmission on the frequency channel is identified (col. 6, lines 44-61. Furthermore, incrementing or decrementing the counter are well known in the art.); (d) setting the counter to the maximum count each time an erroneous transmission on the frequency channel is identified (col. 8, lines 15-20 "maximum count value"); repeating acts (c) and (d) until the counter reaches a minimum count (col. 6, lines 44-60 "incrementing and decrementing the counter is well known in the art" & col. 8, lines 15-29 "reached a value of zero"); and reinserting the frequency channel into the frequency hopping sequence when the counter has reached the minimum count. (col. 8, lines 15-29 "reached a value of zero" "channel is clear")

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Gan, in the manner as claimed and as taught by Knuth, for the benefit of determining interference in a channel.

Re claim 4, the combination of Gan and Knuth further discloses that wherein detecting an erroneous transmission further comprises using checksums that are added to block- transmitted data at an end thereof. (In Gan, see col. 13, lines 13-18)

Re claim 5, the combination of Gan and Knuth further discloses that wherein using checksums comprises adding a CRC (Cyclic Redundancy Check) code to each data block at the end thereof. (In Gan, see col. 13, lines 30-38)

Re claim 11, the combination of Gan and Knuth further discloses a method for data transmission between at least two stations via radio links using the frequency hopping method and the frequency channel selection method of Claim 1. (In Gan, see col. 17, lines 35-37)

Re claim 12, the combination of Gan and Knuth further discloses that wherein the method is based on one of the transmission standards Bluetooth, WDCT, DECT or HomeRF. (In Gan, see col. 7, lines 51-52)

Re claim 18, the combination of Gan and Knuth further discloses that wherein re-inserting the frequency channel further comprises: measuring an interference signal strength associated with the frequency channel(In Gan, see col. 6, lines 30-34, 47-48, 50-54, col. 7, lines 51-55, col. 12, lines 36-39); and determining that interference no longer exists on the frequency channel when the measured interference signal strength



is less than a predetermined amount. (In Gan, see col. 20, lines 46-52, col. 12, lines 36-39) Furthermore, re-testing and re-determination of the channel performance must be done in order to select good channels and not bad channels. This is due to interference changing over time – some “previously good channels may become bad and vice versa”. One way to retest the channels is to measure the RSSI of the channel. If “there is not interference, the RSSI will be low”.

Re claim 19, the combination of Gan and Knuth further discloses that wherein determining that interference no longer exists further comprises: decrementing a counter when the measured signal strength is less than a predetermined threshold (In Knuth, see col. 6, lines 24-60); comparing a count of the counter to a predetermined value (In Knuth, see col. 8, lines 5-29); and determining that interference no longer exists when the count is less than or equal to the predetermined value. (In Knuth, see col. 8, lines 5-29 “channel is clear”)

**5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Batra (US Publication 2003/0147453 A1) in view of Knuth et al. (hereinafter Knuth) (US Patent 5,418,839)**

Re claim 20, Batra discloses a method for selecting frequency channels associated with a frequency hopping sequence, comprising: characterizing a frequency channel of the frequency hopping sequence by incrementing a counter when an erroneous transmission on the frequency channel is identified and decrementing the

counter when an error-free transmission on the frequency channel is identified (See ¶ 29); selectively eliminating the frequency channel from the frequency hopping sequence based on whether the counter exceeds a maximum count (See ¶ 29); decrementing the counter when an error free transmission on the eliminated frequency channel is identified (See ¶ 29)

But the reference of Batra fails to explicitly teach characterizing an eliminated frequency channel by setting the counter to the maximum count when an erroneous transmission on the eliminated frequency channel is identified and selectively reinserting the eliminated frequency channel into the frequency hopping sequence based on whether the counter has reached a minimum count.

However, Knuth does. (See col. 8, lines 4-29) Knuth suggests characterizing an eliminated frequency channel by setting the counter to the maximum count when an erroneous transmission on the eliminated frequency channel is identified ("maximum count value" "channel experiencing interference") and selectively reinserting the eliminated frequency channel into the frequency hopping sequence based on whether the counter has reached a minimum count. ("value is zero" "channel is clear")

Therefore, taking the combined teaching of Gan and Knuth as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Gan, in the manner as claimed and as taught by Knuth, for the benefit of determining interference in a channel.

**Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON FLORES whose telephone number is (571)270-1201. The examiner can normally be reached on Mon-Fri 7-5pm Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. F./  
Examiner, Art Unit 2611  
March 11, 2009

**/David C. Payne/  
Supervisory Patent Examiner, Art Unit 2611**